

Big Data Analytics Lab0

Olayemi Morrison and Greeshma Jeev Koothuparambil

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Lab0: SQL-Queries and Views

1. List all employees, i.e. all tuples in the jbemployee relation.

```
select * from jbemployee;
```

id	name	salary	manager	birthyear	startyear
10	Ross, Stanley	15908	199	1927	1945
11	Ross, Stuart	12067	NULL	1931	1932
13	Edwards, Peter	9000	199	1928	1958
26	Thompson, Bob	13000	199	1930	1970
32	Smythe, Carol	9050	199	1929	1967
33	Hayes, Evelyn	10100	199	1931	1963
35	Evans, Michael	5000	32	1952	1974
37	Raveen, Lemont	11985	26	1950	1974
55	James, Mary	12000	199	1920	1969
98	Williams, Judy	9000	199	1935	1969
129	Thomas, Tom	10000	199	1941	1962
157	Jones, Tim	12000	199	1940	1960
199	Bullock, J.D.	27000	NULL	1920	1920
215	Collins, Joanne	7000	10	1950	1971
430	Brunet, Paul C.	17674	129	1938	1959
843	Schmidt, Herman	11204	26	1936	1956
994	Iwano, Masahiro	15641	129	1944	1970
1110	Smith, Paul	6000	33	1952	1973
1330	Onstad, Richard	8779	13	1952	1971
1523	Zugnoni, Arthur A.	19868	129	1928	1949
1639	Choy, Wanda	11160	55	1947	1970
2398	Wallace, Maggie J.	7880	26	1940	1959
4901	Bailey, Chas M.	8377	32	1956	1975
5119	Bono, Sonny	13621	55	1939	1963
5219	Schwarz, Jason B.	13374	33	1944	1959

2. List the name of all departments in alphabetical order. Note: by “name” we mean the name attribute for all tuples in the jbdept relation.

```
select name from jbdept order by name;
```

name

Bargain

Book

Candy

name
Children's
Children's
Furniture
Giftwrap
Jewelry
Junior Miss
Junior's
Linens
Major Appliances
Men's
Sportswear
Stationary
Toys
Women's
Women's
Women's

3. What parts are not in store, i.e. qoh = 0? (qoh = Quantity On Hand)

```
select * from jbparts where qoh = 0;
```

id	name	color	weight	qoh
11	card reader	gray	327	0
12	card punch	gray	427	0
13	paper tape reader	black	107	0
14	paper tape punch	black	147	0

4. Which employees have a salary between 9000 (included) and 10000 (included)?

```
select * from jbemployee where salary between 9000 and 10000;
```

id	name	salary	manager	birthyear	startyear
13	Edwards, Peter	9000	199	1928	1958
32	Smythe, Carol	9050	199	1929	1967
98	Williams, Judy	9000	199	1935	1969
129	Thomas, Tom	10000	199	1941	1962

5. What was the age of each employee when they started working (startyear)?

```
select name,abs(startyear - birthyear) as age from jbemployee;
```

name	age
Ross, Stanley	18
Ross, Stuart	1
Edwards, Peter	30
Thompson, Bob	40
Smythe, Carol	38
Hayes, Evelyn	32
Evans, Michael	22
Raveen, Lemont	24
James, Mary	49

name	age
Williams, Judy	34
Thomas, Tom	21
Jones, Tim	20
Bullock, J.D.	0
Collins, Joanne	21
Brunet, Paul C.	21
Schmidt, Herman	20
Iwano, Masahiro	26
Smith, Paul	21
Onstad, Richard	19
Zugnoni, Arthur A.	21
Choy, Wanda	23
Wallace, Maggie J.	19
Bailey, Chas M.	19
Bono, Sonny	24
Schwarz, Jason B.	15

6. Which employees have a last name ending with “son”?

```
select * from jbemployee where name like '%son,%';
```

id	name	salary	manager	birthyear	startyear
26	Thompson, Bob	13000	199	1930	1970

7. Which items (note items, not parts) have been delivered by a supplier called Fisher-Price? Formulate this query using a subquery in the where-clause.

```
select * from jbitem where supplier = (select id from jbsupplier where name = 'Fisher-Price');
```

id	name	dept	price	qoh	supplier
43	Maze	49	325	200	89
107	The ‘Feel’ Book	35	225	225	89
119	Squeeze Ball	49	250	400	89

8. Formulate the same query as above, but without a subquery.

```
select i.* from jbitem i, jbsupplier s where (i.supplier = s.id && s.name = 'Fisher-Price');
```

id	name	dept	price	qoh	supplier
43	Maze	49	325	200	89
107	The ‘Feel’ Book	35	225	225	89
119	Squeeze Ball	49	250	400	89

9. Show all cities that have suppliers located in them. Formulate this query using a subquery in the where-clause.

```
select name from jbcity where id in (select city from jbsupplier);
```

name
Amherst
Boston
New York
White Plains
Hickville
Atlanta
Madison
Paxton
Dallas
Denver
Salt Lake City
Los Angeles
San Diego
San Francisco
Seattle

10. What is the name and color of the parts that are heavier than a card reader? Formulate this query using a subquery in the where-clause. (The SQL query must not contain the weight as a constant.)

```
select name, color from jbparts where weight >
(select weight from jbparts where name = 'card reader');
```

name	color
disk drive	black
tape drive	black
line printer	yellow
card punch	gray

11. Formulate the same query as above, but without a subquery. (The query must not contain the weight as a constant.)

```
select jbparts.name, jbparts.color from jbparts join jbparts
as card_reader on jbparts.weight > card_reader.weight where
card_reader.name = 'card reader';
```

name	color
disk drive	black
tape drive	black
line printer	yellow
card punch	gray

12. What is the average weight of black parts?

```
select avg(weight) from jbparts where color = 'black';
```

avg.weight.
347.25

13. What is the total weight of all parts that each supplier in Massachusetts (“Mass”) has delivered? Retrieve the name and the total weight for each of these suppliers. Do not forget to take the quantity

of delivered parts into account. Note that one row should be returned for each supplier.

```
select s.name,sum(s.quan * p.weight) as 'total weight' from
( select * from jbsupply s join
  ( select id,name from jbsupplier where city in
    ( select id from jbcity where state = 'mass' ) )
  as slr on s.supplier = slr.id )as s join jbparts
as p on s.part = p.id
group by supplier ;
```

name	total.weight
Fisher-Price	1135000
DEC	3120

14. Create a new relation (a table), with the same attributes as the table items using the CREATE TABLE syntax where you define every attribute explicitly (i.e. not as a copy of another table). Then fill the table with all items that cost less than the average price for items. Remember to define primary and foreign keys in your table!

```
create table item( id int unsigned,
  name varchar(20),
  dept int,
  price int unsigned,
  qoh int unsigned,
  supplier int,
  constraint pk_item primary key(id),
  constraint fk_deliver_supplier foreign key (supplier) references jbsupplier(id),
  constraint fk_onsheft_dept foreign key (dept) references jbdept(id) );

insert into items(id, name, dept, price, qoh, supplier)

select * from jbitem where price < (select avg(price) from jbitem);

select * from items;
```

id	name	dept	price	qoh	supplier
11	Wash Cloth	1	75	575	213
19	Bellbottoms	43	450	600	33
21	ABC Blocks	1	198	405	125
23	1 lb Box	10	215	100	42
25	2 lb Box, Mix	10	450	75	42
26	Earrings	14	1000	20	199
43	Maze	49	325	200	89
106	Clock Book	49	198	150	125
107	The 'Feel' Book	35	225	225	89
118	Towels, Bath	26	250	1000	213
119	Squeeze Ball	49	250	400	89
120	Twin Sheet	26	800	750	213
165	Jean	65	825	500	33
258	Shirt	58	650	1200	33